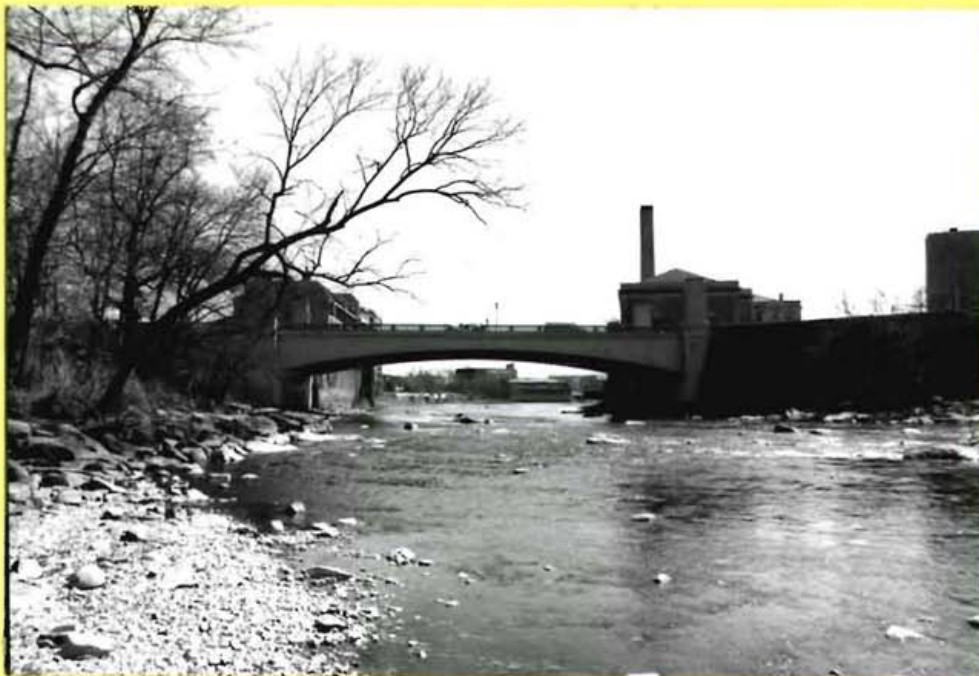


10. NAME(S) OF STRUCTURE

State Bridge Number 575

11. PHOTOS (W/ FILM ROLL & FRAME NO.) AND SKETCH MAP OF LOCATION

74A:17-29



74A:17

Mack, Warren W. "A History of Motor Highways in Delaware", in Reed, Henry Clay, Delaware: A History of the First State, vol.2, pp.535-550 (NY: Lewis Historical Publishing Co., 1947).

Delaware State Program. Delaware State Highways; The Story of Roads in Delaware.... [Newark, Delaware: Press of Kells, 1919].

Federal Writers' Project. Delaware: A Guide to the First State. (New York: Viking Press, 1938).

The National Cyclopaedia of American Biography, vol.A (New York: James T. White & Company, 1930).

Wilmington Evening Journal Every Evening, 19 March 1928.

Delaware State Archives. New Castle County Levy Court Records. Specifications, Proposals, Contract and Bond files.

Delaware State Archives. New Castle County Road Commissioners Records, 1750-1940.

Delaware DOT records: Annual Reports; contract files.

Plans on file at Delaware DOT: Contract #BNC-6, 82-099-01, 82-099-02, 70-040-09, 80-050-13

13. INVENTORIED BY:

AFFILIATION

P.A.C. Spero & Company with Kidde Consultants for Delaware DOT

DATE

April-November 1988



# HABS/HAER INVENTORY

See "HABS/HAER Inventory Guidelines" before filling out this card.

## 1. NAME(S) OF STRUCTURE

State Bridge Number 575

## 2. LOCATION

North Market Street Bridge over Brandywine Creek  
Wilmington, New Castle County, Delaware

## 3. DATE(S) OF CONSTRUCTION

1928

## 4. USE (ORIGINAL/CURRENT)

Vehicular

## 5. RATING

SG

## 6. CONDITION

Good: Portions of railing missing; some cracks in substructure.

State Bridge Number 575 is a 213 feet long steel girder bridge with a clear span of 150 feet. The girders are cantilevered from the abutments with counterweight pockets extending 29 feet into the abutments. The fascia girders are concrete encased. All girders are curved giving the bridge the appearance of an arch in elevation. The substructure is concrete and the railing is a concrete balustrade. End posts at the portals are concrete and highly ornamented.

Delaware Department of Transportation records indicate that Bridge 575 was built in 1928. The bridge was designed by Harrington, Howard, and Ash, consulting engineers of Kansas City. It was built by authority of the Levy Court of New Castle County, under the direction of County Engineer Charles E. Grubb. The builder was the Frederick Snare Corporation of Philadelphia and New York, for a bid price of \$382,060. At the time of construction, the bridge location was situated within Wilmington's ninth ward. This area had been experiencing consistent growth during the mid-1920s and the local businessmen looked forward to an improved crossing to encourage additional growth for the ward. In addition, this location was an important point in a heavily traveled route within the city, feeding traffic to Sixteenth Street, King Street and French Street. A traffic study conducted by the New Castle County revealed that 85% of the traffic across the previous bridge was passenger automobiles. The specifications for the present Bridge 575 describe a "double cantilever steel deck girder structure with a single span of 150 feet supported upon two concrete abutments. It provides a paved roadway 60 feet wide accommodating double street car tracks, and two 10 feet sidewalks. The steel girders will be encased, in part with poured concrete and in part [sic] cement mortar placed with the cement gun. . . . Each cantilever arm has nine parallel deck girders which extend back across the supporting abutment and are anchored down at the rear. The pairs of cantilever arms are connected by shear locks in the center of the span." Eight combined trolley and light poles were to be erected along the bridge, and water pipes, gas pipes, electrical conduits and other utilities were incorporated into the structure. This extensive project also involved the construction of a stone retaining wall and a concrete comfort station, alterations to the street grades, and the raising of the railroad track at the north end of the bridge. Due to the high volume of traffic at this location, the specifications required the builder to construct the western half of the new bridge while traffic continued to use the previous bridge. When the western half of the bridge was finished except for the Gunnite encasement on the steel girders, the traffic was shifted to the completed portion and the east half of the new bridge was constructed. At that point, the old bridge was removed. A crossing of the Brandywine Creek has existed at this location since the eighteenth century. In 1762, the Delaware General Assembly authorized the construction of a chain suspension bridge on stone abutments. Prior to this, a ford or ferry offered the only means of crossing the Brandywine. The first Market Street Bridge over Brandywine Creek, a timber structure, was completed and opened to traffic in 1764, superseding the ferry that operated from a terminus of French Street. The bridge underwent repairs at various times and, in 1806, a company was formed to replace the deteriorated span with a stone arch bridge. That bridge was never built despite vigorous public petitioning for a new crossing. The Levy Court continued to study the various proposals but took no action until 1809, when \$4,000 was appropriated to construct a chain bridge. Completed in 1810, the chain-link suspension bridge was used until 1822, when a freshet washed it away. A timber covered bridge was next constructed at a cost of \$7558.23; however, it too was destroyed by a flood in 1839. A new timber covered bridge was constructed in 1839. A wrought iron Pratt through truss, erected by New Jersey Steel and Iron Company, replaced the second covered bridge in 1887 and was used until 1928, when the present structure was erected.

Bridge 575 is an embellished steel girder bridge with a clear span of 150 feet. Unlike the majority of historic steel girder bridges surveyed in Delaware, which are simple spans, this bridge is a cantilevered structure. It is also located within the Brandywine Village Historic District. Bridge 575 was designed by the firm of Harrington, Howard and Ash of Kansas City, Missouri, a nationally-prominent firm of bridge engineers during this period. John Lyle Harrington and Ernest E. Howard both began their bridge-building careers in association with J. A. L. Waddell, whose 1892 design for a vertical lift bridge at South Halstead Street in Chicago had established his eminence as a pioneer of the type. Harrington went to work in Waddell's office in Kansas City after graduating from the University of Kansas in 1895; he left to pursue further education and worked for a succession of bridge companies until 1907, when he returned to Kansas City to enter a consulting practice in partnership with Waddell. It was there that he met Howard, who had been working with the firm of Waddell and Hedrick since 1901 as draftsman, designer, and resident engineer. Upon the 1907 reorganization of the firm as Waddell and Harrington, Howard assumed the position of associate engineer. In 1914, Harrington, Howard, and Louis R. Ash formed Harrington, Howard & Ash which designed and constructed bridges until 1928. Howard and Ash became associated with the firm of Ash, Howard, Needles and Tammen which produced the bascule bridge carrying North Church Street over the Brandywine in Wilmington (Bridge #577, built 1932). Both Harrington and Howard patented numerous improvements to movable bridges; both held offices in national professional organizations, and Howard contributed several articles to professional journals. In Delaware, their work is exemplified by Bridges 393, a swing bridge crossing the Appoquinimink River at Odessa, constructed in 1928, and 688, a bascule span built in 1927 to carry South Market Street over the Christina River in Wilmington. In addition, they were consulting engineers for the Rising Sun Bridge over the Brandywine Creek (#1), the only through truss bridge identified within the state, constructed in 1928. A later reorganization as Ash, Howard, Needles and Tammen produced the bascule bridge carrying North Church Street over the Brandywine in Wilmington (Bridge #577, built 1932). By 1938, John Lyle Harrington had formed a partnership with Frank M. Cortelyou in Kansas City. Both Harrington and Howard introduced numerous improvements to movable bridges; both held offices in national professional organizations, and Howard contributed several articles to the technical press.